Amendments to the Claims

Applicant respectfully requests reconsideration of this application as amended. Claims 1, 3-25, 27-39 are pending in this application. Claims 1 and 25 have been amended; claims 2 and 26 have been canceled; and no claims have been added.

Listing of Claims:

1. (Currently Amended) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

provisioning a non-BLSR protected layer 2/3 channel over a BLSR;

provisioning a tunnel over the BLSR, wherein the tunnel is a multi-protocol label switching (MPLS) tunnel; and

protecting the non-BLSR protected layer 2/3 channel between a first and second node of the BLSR with the tunnel.

2. (Canceled)

- 3. (Original) The machine-readable medium of claim 1 further comprising provisioning a second tunnel on the BLSR, the second tunnel to protect the non-BLSR protected layer 2/3 channel between the first node and a second node of the BLSR.
- 4. (Original) The machine-readable medium of claim 1 further comprising provisioning a second tunnel on the BLSR, the second tunnel to protect the non-BLSR protected layer 2/3 channel between a third node and a fourth node of the BLSR.
- 5. (Original) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:

- inhibiting automatic protection switching on a set of physical channels, the set of physical channels corresponding to a first fiber;
- creating a logical working interface and associating the logical working interface to a first physical port, the physical port connecting to the first fiber;
- creating a logical protecting interface and associating the logical protecting interface to a second physical port, the second physical port connecting to a second fiber;
- associating the logical working and logical protecting interfaces to a forwarding interface, the forwarding interface corresponding to a node;
- setting the forwarding interface to refer to the logical working interface while the fiber is not failing; and
- modifying the forwarding interface to refer to the logical protecting interface while the fiber is failing.
- 6. (Original) The machine-readable medium of claim 5 wherein the logical protecting interface corresponds to a pre-provisioned tunnel.
- 7. (Original) The machine-readable medium of claim 5 wherein the logical protecting interface corresponds to an MPLS tunnel.
- 8. (Original) The machine-readable medium of claim 5 further comprising establishing a tunnel over a second fiber, the logical protecting interface being associated to the tunnel.
- 9. (Original) The machine-readable medium of claim 5 further comprising: detecting failure of the first fiber; and transmitting a message on the second fiber to a set of intermediate nodes, the message indicating failure of the first fiber.
- 10. (Original) The machine-readable medium of claim 5 further comprising: transmitting a first set of layer 2/3 traffic in the second physical port while the first fiber is not failing; and

- multiplexing the first set of layer 2/3 traffic with a second set of layer 2/3 traffic for transmission in the second physical port while the first fiber is failing, the second set of layer 2/3 traffic being transmitted in the first physical port while the first fiber is not failing.
- 11. (Original) A machine-readable medium that provides instructions, which when executed by a set of processors, cause said set of processors to perform operations comprising:
 - inhibiting automatic protection switching on a set of physical channels, the set of physical channels corresponding to a first fiber;
 - creating a logical working interface and associating the logical working interface to a first physical port, the physical port corresponding to the first fiber;
 - creating a logical protecting interface and associating the logical protecting interface to a tunnel, the tunnel corresponding to a second fiber;
 - associating the logical working and logical protecting interfaces to a forwarding interface, the forwarding interface corresponding to a node;
 - setting the forwarding interface to refer to the logical working interface while the fiber is not failing; and
 - modifying the forwarding interface to refer to the logical protecting interface while the fiber is failing.
- 12. (Original) The machine-readable medium of claim 11 wherein the tunnel is preprovisioned over the second fiber.
- 13. (Original) The machine-readable medium of claim 11 wherein the tunnel is an MPLS tunnel over the second fiber.
- 14. (Original) The machine-readable medium of claim 11 further comprising: detecting failure of the first fiber; and transmitting a message on the second fiber to a set of intermediate nodes, the message indicating failure of the first fiber.

- 15. (Original) The machine-readable medium of claim 11 further comprising: transmitting a first set of layer 2/3 traffic in the tunnel while the first fiber is not failing; and
 - multiplexing the first set of layer 2/3 traffic with a second set of layer 2/3 traffic for transmission in the tunnel while the first fiber is failing, the second set of layer 2/3 traffic being transmitted in the first physical port while the first fiber is not failing.

16. (Original) A network element comprising:

- a first fiber connecting the network element to a second network element;
- a second fiber connecting the network element to a third network element;
- a first optical processing circuitry coupled to the first fiber, the optical processing circuitry to transmit a first set of optical traffic in a first set of physical channels over the first fiber;
- a first egress layer 2/3 processing circuitry coupled to the first optical processing circuitry, the first egress layer 2/3 processing circuitry to transmit a set of layer 2/3 traffic to the first optical processing circuitry while the first fiber is not failing, the set of layer 2/3 traffic to be inserted into the first set of optical traffic;
- a second optical processing circuitry coupled to the second fiber, the second optical processing circuitry to transmit a second set of optical traffic in a second set of physical channels over the second fiber;
- a second egress layer 2/3 processing circuitry coupled to the second optical processing circuitry, the second egress layer 2/3 processing circuitry to transmit the set of layer 2/3 traffic to the second optical processing circuitry while the first fiber is failing, the set of layer 2/3 traffic to be inserted in to the second set of optical traffic;
- an ingress layer 2/3 processing circuitry coupled to the first and second egress layer 2/3 processing circuitry, the ingress layer 2/3 processing circuitry to receive and transmit the set of layer 2/3 traffic; and
- a control card coupled to the first and second optical processing circuitry and the ingress layer 2/3 processing circuitry, the control card to detect failure of the first fiber, to

indicate failure of the first fiber to the ingress layer 2/3 processing circuitry, and to mask the first and second set of physical channels from automatic protection switching.

- 17. (Original) The network element of claim 16 wherein the set of layer 2/3 traffic is multiplexed with a second set of layer 2/3 traffic on the second egress layer 2/3 processing circuitry.
- 18. (Original) The network element of claim 16 further comprising a tunnel to carry the set of layer 2/3 traffic in the second set of physical channels while the first fiber is failing.
- 19. (Original) The network element of claim 16 further comprising an MPLS tunnel to carry the set of layer 2/3 traffic in the second set of physical channels while the first fiber is failing.
- 20. (Original) The network element of claim 16 wherein the ingress layer 2/3 processing circuitry includes:
 - a forwarding interface to forward traffic to the first network element;
 - a working interface coupled to the forwarding interface, the working interface to refer to the first physical port; and
 - a protecting interface coupled to the forwarding interface, the protecting interface to refer to the second physical port.
- 21. (Original) An apparatus comprising:
 - a first fiber connecting the network element to a second network element;
 - a second fiber connecting the network element to a third network element;
 - a first optical processing circuitry coupled to the first fiber, the optical processing circuitry to transmit a first set of optical traffic in a first set of physical channels over the first fiber;
 - a first egress layer 2/3 processing circuitry coupled to the first optical processing circuitry, the first egress layer 2/3 processing circuitry to transmit a set of layer

- 2/3 traffic to the first optical processing circuitry while the first fiber is not failing, the set of layer 2/3 traffic to be inserted into the first set of optical traffic;
- a second optical processing circuitry coupled to the second fiber, the second optical processing circuitry to transmit a second set of optical traffic in a second set of physical channels over the second fiber;
- a second egress layer 2/3 processing circuitry coupled to the second optical processing circuitry, the second egress layer 2/3 processing circuitry to tunnel the set of layer 2/3 traffic and to pass the set of layer 2/3 traffic to the second optical processing circuitry while the first fiber is failing, the set of layer 2/3 traffic to be inserted in to the second set of optical traffic;
- an ingress layer 2/3 processing circuitry coupled to the first and second egress layer 2/3 processing circuitry, the ingress layer 2/3 processing circuitry to receive and transmit the set of layer 2/3 traffic; and
- a control card coupled to the first and second optical processing circuitry and the ingress layer 2/3 processing circuitry, the control card to detect failure of the first fiber, to indicate failure of the first fiber to the ingress layer 2/3 processing circuitry, and to mask the first and second set of physical channels from automatic protection switching.
- 22. (Original) The network element of claim 21 wherein the set of layer 2/3 traffic is multiplexed with a second set of layer 2/3 traffic on the second egress layer 2/3 processing circuitry.
- 23. (Original) The network element of claim 21 wherein the tunnel of the set of layer 2/3 traffic is with MPLS.
- 24. (Original) The network element of claim 21 wherein the ingress layer 2/3 processing circuitry includes:
 - a forwarding interface to forward traffic to the first network element;

- a working interface coupled to the forwarding interface, the working interface to refer to the first physical port; and
- a protecting interface coupled to the forwarding interface, the protecting interface to refer to the second physical port.
- 25. (Currently Amended) A computer implemented method comprising:
 provisioning a non-BLSR protected layer 2/3 channel over a BLSR;
 provisioning a tunnel over the BLSR, wherein the tunnel is a multi-protocol label
 switching (MPLS) tunnel; and
 - protecting the non-BLSR protected layer 2/3 channel between a first and second node of the BLSR with the tunnel.
- 26. (Canceled)
- 27. (Original) The computer implemented method of claim 25 further comprising provisioning a second tunnel on the BLSR, the second tunnel to protect the non-BLSR protected layer 2/3 channel between the first node and a second node of the BLSR.
- 28. (Original) The computer implemented method of claim 25 further comprising provisioning a second tunnel on the BLSR, the second tunnel to protect the non-BLSR protected layer 2/3 channel between a third node and a fourth node of the BLSR.
- 29. (Original) A computer implemented method comprising:
 - inhibiting automatic protection switching on a set of physical channels, the set of physical channels corresponding to a first fiber;
 - creating a logical working interface and associating the logical working interface to a first physical port, the physical port connecting to the first fiber;
 - creating a logical protecting interface and associating the logical protecting interface to a second physical port, the second physical port connecting to a second fiber;

- associating the logical working and logical protecting interfaces to a forwarding interface, the forwarding interface corresponding to a node;
- setting the forwarding interface to refer to the logical working interface while the fiber is not failing; and
- modifying the forwarding interface to refer to the logical protecting interface while the fiber is failing.
- 30. (Original) The computer implemented method of claim 29 wherein the logical protecting interface corresponds to a pre-provisioned tunnel.
- 31. (Original) The computer implemented method of claim 29 wherein the logical protecting interface corresponds to an MPLS tunnel.
- 32. (Original) The computer implemented method of claim 29 further comprising establishing a tunnel over a second fiber, the logical protecting interface being associated to the tunnel.
- 33. (Original) The computer implemented method of claim 29 further comprising:

 detecting failure of the first fiber; and

 transmitting a message on the second fiber to a set of intermediate nodes, the message

 indicating failure of the first fiber.
- 34. (Original) The computer implemented method of claim 29 further comprising: transmitting a first set of layer 2/3 traffic in the second physical port while the first fiber is not failing; and
 - multiplexing the first set of layer 2/3 traffic with a second set of layer 2/3 traffic for transmission in the second physical port while the first fiber is failing, the second set of layer 2/3 traffic being transmitted in the first physical port while the first fiber is not failing.

- 35. (Original) A computer implemented method comprising:
 - inhibiting automatic protection switching on a set of physical channels, the set of physical channels corresponding to a first fiber;
 - creating a logical working interface and associating the logical working interface to a first physical port, the physical port corresponding to the first fiber;
 - creating a logical protecting interface and associating the logical protecting interface to a tunnel, the tunnel corresponding to a second fiber;
 - associating the logical working and logical protecting interfaces to a forwarding interface, the forwarding interface corresponding to a node;
 - setting the forwarding interface to refer to the logical working interface while the fiber is not failing; and
 - modifying the forwarding interface to refer to the logical protecting interface while the fiber is failing.
- 36. (Original) The computer implemented method of claim 35 wherein the tunnel is preprovisioned over the second fiber.
- 37. (Original) The computer implemented method of claim 35 wherein the tunnel is an MPLS tunnel over the second fiber.
- 38. (Original) The computer implemented method of claim 35 further comprising:
 detecting failure of the first fiber; and
 transmitting a message on the second fiber to a set of intermediate nodes, the message
 indicating failure of the first fiber.
- 39. (Original) The computer implemented method of claim 35 further comprising: transmitting a first set of layer 2/3 traffic in the tunnel while the first fiber is not failing; and

multiplexing the first set of layer 2/3 traffic with a second set of layer 2/3 traffic for transmission in the tunnel while the first fiber is failing, the second set of layer 2/3 traffic being transmitted in the first physical port while the first fiber is not failing